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<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)	Application Number	10/034,826	
	Filing Date	December 28, 2001	
	First Named Inventor	Garrett Holmes, et al.	
	Art Unit	2832	
	Examiner Name	Lincoln Donovan	
Total Number of Pages in This Submission	30	Attorney Docket Number	DKT 00054A (BWI-00055)

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input checked="" type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/Declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
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<input type="checkbox"/> Response to Missing Parts/Incomplete Application	Remarks	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	Applicant believes no fee to be due for the attached filing, however, should additional fees be due in order to prevent the abandonment of this application, please consider this as authorization to charge Deposit Account No. 501612 (Warn, Hoffmann, Miller & LaLone, P.C.) for any such fees due. A duplicate copy of this document is enclosed for this purpose.	

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Warn, Hoffmann, Miller & LaLone, P.C. Philip R. Warn - Reg No. 32775
Signature	
Date	June 28, 2004

CERTIFICATE OF TRANSMISSION/MAILING	
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.	
Typed or printed name	Philip R. Warn - Reg. No. 32775
Signature	
Date	June 28, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Adjustment date: 11/02/2004 SDIRETA1  
07/13/2004 PYARBORO 00000002 023182 10034826  
01 FC:1251 110.00 CR

004 PYARBORO 00000002 023182 10034826

251 110.00 BA

LAW OFFICES

**WARN, HOFFMANN, MILLER & LALONE, P.C.**

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Richard W. Hoffmann  
Douglas P. LaLone  
John K. McCulloch  
John A. Miller  
Gregory L. Ozga  
Preston H. Smirman  
Philip R. Warn

691 North Squirrel Road - Suite 140  
Auburn Hills, Michigan 48326

[www.warnhoffmann.com](http://www.warnhoffmann.com)

September 22, 2004

By: Facsimile Only

Telephone: (248) 364-4300  
Facsimile: (248) 364-4285

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Saginaw, Michigan 48603  
Telephone: (989) 792-2500  
Facsimile: (989) 792-2535

U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

Attention: Refunds Branch

Re: **Request for Refund**  
on Monthly Statement of Deposit Account No. 023182  
for Borg-Warner Automotive Inc.  
Statement Dated 7-30-04

and Charge on Statement for U.S. Patent Application  
Serial No. 10/034,828 - Filed: December 28, 2001  
Attorney Docket No. DKT 00054A (BWI-00055)

Dear Sirs:

To follow is a copy of the July, 2004 Monthly Statement of Deposit Account No. 023182 for Borg-Warner Automotive Inc. This is a Request to Refund the amount of \$110.00 charged on July 13, 2004 for a One Month Extension of Time for the above patent application, since no Extension of Time was requested or necessary.

Enclosed are copies of the Office Action dated March 28, 2004, and our Amendment and Response to Office Action dated June 28, 2004. Because June 28, 2004 was a Saturday, the 3 month deadline for filing a Response was the following Monday, June 28, 2004. Therefore, our Response was timely filed, and our client (Borg-Warner Automotive Inc.) should not have been charged for an Extension of Time.

Thank you very much for your attention to this matter. If you have any questions, please contact me at (248) 364-4300.

Very truly yours,

  
Philip R. Warn  
Reg. No. 32775

PRW:jmz  
Enclosures



UNITED STATES  
PATENT AND  
TRADEMARK OFFICE

DA -9-04

# MONTHLY STATEMENT OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and return top portion with your check. Make check payable to Director of Patents & Trademarks.

BORG-WARNER AUTOMOTIVE INC  
ATTN: DEBBIE KOCHAN  
3800 AUTOMATION AVENUE, STE. 100

AUBURN HILLS, MI 48326

FINA

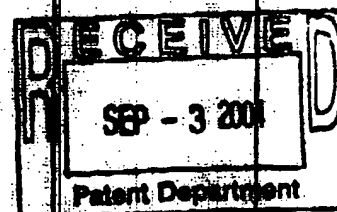
Under Secretary of Commerce for Intellectual Property and  
Director of the United States Patent and Trademark Office  
Washington, DC 20231  
www.uspto.gov

Account No.	023182
Date	7-30-04
Page	1

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DATE POSTED			CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
MO.	DAY	YR.						
7	1	04	248	10459666	BW-DKTO3011	1501	1330.00	9916.75
7	1	04	249	10459666	BW-DKTO3011	1504	300.00	9616.75
7	8	04	213	10464190	BW-DKTO3020	1501	1330.00	8286.75
7	8	04	214	10464190	BW-DKTO3020	1504	300.00	7986.75
7	13	04	2	10034826	00034826-0	1251	110.00	7876.75
7	14	04	2	10461539	BW-DKTO2042A	1501	1330.00	6546.75
7	14	04	3	10461539	BW-DKTO2042A	1504	300.00	6246.75
7	30	04	3	10147710	BW-DKTO1080	1501	1330.00	4916.75
7	30	04	4	10147710	BW-DKTO1080	1504	300.00	4616.75
AN AMOUNT SUFFICIENT TO COVER ALL SERVICES REQUESTED MUST ALWAYS BE ON DEPOSIT			OPENING BALANCE	TOTAL CHARGES	TOTAL CREDITS	CLOSING BALANCE		
			11246.75	6430.00	0.00	4616.75		

MS020A (2/2003)



DD INDICATES OVERDRAWN

But-00065  
Smith Office Action De: 12/4/92  
Office Action Summary

10/034,430

HOLMES ET AL.

Examiner

Art Unit

Domestic Patent

3222

-- The MAILING DATE of this communication is 12/4/92 and the correspondence address is --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than three (3) months, timely filing of a reply within the shortened period will be considered timely.
- If NO period for reply is specified above, the standard statutory period will apply (see MPEP § 706.02(a) from the mailing date of this communication).
- Failure to reply within the set or extended period for reply will be deemed to constitute abandonment of the application (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 June 1992
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1835 O.D. 11, 463 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 2-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-048)
- 3) ☐ Information Disclosure Statement(s) (PTO-1448) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s), \_\_\_\_\_.
- 5) ☐ Notice of Internal Patent Application (PTO-182)
- 6) ☐ Other: \_\_\_\_\_.

09/22/2004 14:02 2483644285

WARNHOFFMANN

PAGE 05/28

04/22/04 THU 08:51 FAX 1 703 305 7723

PTO AU 2825

002



UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, DC 20503  
DATE: 04/22/04

APPLICATION NO.	FILING DATE	INVENTOR	ATTORNEY	CONFIRMATION NO.
10/034,826	12/28/2001	OSCAR TROIAN	JOHN J. BOWEN JAMES BOWEN	1494

790 03/26/2004

Patent Docket Administrator  
Borg Warner Inc.  
3001 West Big Beaver Rd. - Suite 200  
P.O. Box 5060  
Troy, MI 48007-5060

EXAMINER

RONOVAN, LINDSEY

ACT LINDSEY JAMES BOWEN

2002

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Application/Control Number: 10/034,526  
Art Unit: 2832

Page 2

**DETAILED ACTION*****Election/Restrictions***

Applicant's election with traverse of group I, claims 1-5 in Paper No. 6 is acknowledged. The traversal is on the grounds that the multiple areas of search for all of the claimed inventions would have been necessitated by the claimed subject matter. This is not found persuasive because each claimed invention is directed towards structure and circuitry requiring differing considerations and search areas.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parach [US 4,538,645] in view of Hamilton et al. [US 5,707,039].

Regarding claim 1, Parach discloses a control valve assembly comprising:

- a housing [40] defining an internal chamber therein;
- an electromagnetic coil [22] wound on a bobbin [38] coaxially mounted within the housing;
- an axially movable armature [72], having first and second ends, mounted in the internal chamber;
- an actuation member [74] extending from the armature;

Application/Control Number: 10/034,528

Page 3

Art Unit: 2832

- a pole piece [46] operably associated with the armature;
- a valve manifold [12] including control passages [18, 19];
- first and second valve seats [figure 3];
- a valve [66] positioned for selectively sealing on the first or second valve seats;
- a spring [76] for biasing the armature; and
- control means [column 5, line 57-column 6, line 14].

Perach discloses the instant claimed invention except for a flux tube partially surrounding the armature.

Hamilton et al. disclose a hydraulic solenoid having an armature [41] interacting with a flux tube [33].

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use the flux tube design with the pole piece of Perach, as suggested by Hamilton et al., for the purpose of increasing activation force.

Regarding claims 2-3 and 6-7, The specific control functions, bias states and valve positioning would have been an obvious design consideration dependent upon the specific application of the hydraulic valve.

Claims 4-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perach, as modified, as applied to claim 1 above, and further in view of Berkheimer et al. [US 5,752,689].

Application/Control Number: 10/034,826

Page 4

Art Unit: 2832

Perach, as modified, discloses the instant claimed invention except for the valve being a ball valve.

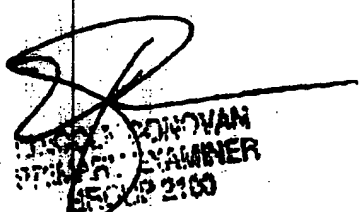
Barkhimer et al. disclose a solenoid valve assembly having a ball type valve.

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use a ball type valve design of Barkhimer et al. for the valve of Perach, as modified, for the purpose of maintaining a superior seal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donovan Lincoln whose telephone number is 703 308-3111. The examiner can normally be reached on M-F 8:30-5:00.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1920.

ldd  
March 19, 2004

  
DONOVAN  
LINCOLN  
EXAMINER  
GROUP 2100



**Notice of References Cited**

Application No.

10034-000

Applicant's Inventor Under

Reclamation  
HOLMES ET AL.

Examiner

Donovan, L. H.

Art Unit

2832

Page 1 of 1

**U.S. PATENT DOCUMENTS**

* W		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,752,699	05-1998	Barthmer et al.	251/129.16
	B	US-5,707,038	01-1998	Henderson et al.	251/129.17
	C	US-4,538,645	09-1985	Perach, Ael	137/825.85
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

* W		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

* W		Include as applicable: Author, Title, Date, Publisher, Edition or Version, Pertinent Pages				
	U					
	V					
	W					
	X					

\*A copy of this reference is not being furnished with this Office action. (See 37 CFR 1.97.)  
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

FORM HDP-1449 (Based on Form PTO-1449)

PATENT AND TRADEMARK OFFICE  
 INFORMATION DISCLOSURE CITATION  
 (Use several sheets if necessary)

Sheet 2 of 3

Applicant Name	Serial No.
WERNHOFMANN (PCT/JP-000000)	10/034,820
Inventor	
Garnett Holmes, et al.	
Filing Date	Class
December 28, 2001	2839

## U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(if appropriate) Filing Date
22.	LD	4,564,046	1/1986	Lungu		
23.		4,532,951	6/1985	Fernandez		
24.		4,494,727	1/1985	Barnes, et al.		
25.		4,483,484	11/1984	Holmes, et al.		
26.		4,411,289	10/1983	Waters		
27.		4,226,142	10/1980	Rosenfeld, et al.		
28.		3,989,063	11/1978	Barnes, et al.		
29.		3,970,111	7/1978	Barnes, et al.		
30.		3,964,618	6/1976	Holmes, et al.		
31.		2,090,569	10/1936	Hinge		

## FOREIGN PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes	No
1.	LD	DE 19,744,696	4/1990	Germany			
2.		WO 8,848,332	10/1990				
3.		DE 19,622,101	12/1997	Germany			
4.		DE 4,431,459	8/1994	Germany			
5.		DE 4,131,033	3/1993	Germany			
6.		2,041,593	6/1991	Canada			
7.		DE 3,907,883	8/1989	Germany			

Examiner:

DONDAN

Date Considered:

08-06-02

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 806. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM HDP-1449 (Based on Form PTO-1449)

**PATENT AND TRADEMARK OFFICE**  
**INFORMATION DISCLOSURE CITATION**  
 (Use several sheets if necessary)

Sheet 3 of 3

App. No.	Serial No.
10/034,826	10/034,826
Class	Group
2836	2836
December 28, 2001	

**FOREIGN PATENT DOCUMENTS**

Ref. Desk.	Examiner's Initials	Document Number	Date	Country	Class/Section	Translation No.
8.	LD	DE 3,618,830 A1	12/1987	Germany		

Examiner:

DO-DOVAN

Date Considered:

08-06-03

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE CARD						
Ref. Desig.	Examiner's Initials	Document Number	Date	Inventor	Class/ Subclass	If appropriate, Filing Date
1.	LD	6,161,813	12/2000	Partner, et al.		000
2.		6,116,870	9/2000	Kramer		
3.		6,069,784	6/2000	Davis		
4.		5,916,799	6/1999	Brown, et al.		
5.		5,810,328	6/1998	Bochard		
6.		5,769,121	6/1998	Werner		
7.		5,730,509	3/1998	Elh, et al.		
8.		5,707,039	1/1998	Harrison, et al.		
9.		5,645,097	7/1997	Zachmann, et al.		
10.		5,636,828	6/1997	Brown, et al.		
11.		5,617,890	4/1997	Bash, et al.		
12.		5,307,774	5/1994	Hammer		
13.		5,301,921	4/1994	Kumar		
14.		5,289,841	3/1994	Martinez		
15.		5,218,999	6/1993	Tennico		
16.		5,127,824	7/1992	Davis		
17.		5,109,885	5/1992	Tischer		
18.		5,069,420	12/1991	Stella, et al.		
19.		5,051,631	9/1991	Anderson		
20.		4,907,684	3/1990	Brown		
21.	↓	4,662,605	5/1987	Gardner		

Examiner:

DONIVAN

Date Considered: 07-06-03

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

TO PHILIP WARN

SN: 10/034,826

DKT# DKT 00054A (BWI-00055)

FAX # 248-364-4285

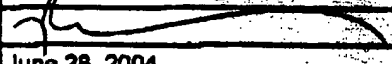
PTO/RS/21 (08-03)

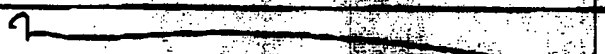
Applicant Fee: \$400.00, OASIS 2001-0001  
 U.S. DEPARTMENT OF COMMERCE  
 Patent and Trademark Office

Under the Paperwork Reduction Act of 1995, no person is required to provide information on this form unless it displays a valid OMB control number.

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	Examiner Name	Lincoln Donovan	
Total Number of Pages in This Submission	30	Attorney Docket Number	DKT 000004A (BWI-00055)

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawings <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Authorization <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD Number of CD	<input type="checkbox"/> After Allowance communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Motion, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return Receipt Postcard
<p>Applicant believes no fees to be due for the attached filing, however, should additional fees be due in order to prevent the abandonment of this application, please consider this as authorization to charge Deposit Account No. 501612 (Warn, Hoffmann, Miller &amp; LaLone, P.C.) for any such fees due. A duplicate copy of this document is enclosed for this purpose.</p>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Warn, Hoffmann, Miller & LaLone, P.C. Philip R. Warn - Reg No. 32775
Signature	
Date	June 28, 2004

CERTIFICATE OF TRANSMITTAL	
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Typed or printed name	Philip R. Warn - Reg. No. 32775
Signature	
Date	June 28, 2004

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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 10/034,826  
Filing Date: December 28, 2001  
Applicant: Garrett Holmes, et al.  
Group Art Unit: 2832  
Examiner: Lincoln Donovan  
Title: VARIABLE BLEED SOLENOID  
Attorney Docket: DKT 00054A (BWI-00055)

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**AMENDMENT AND RESPONSE TO OFFICE ACTION**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is in response to the Examiner's Office Action mailed March 26, 2004. The Applicant respectfully requests reconsideration of the Examiner's rejections and/or

objections in view of the remarks set forth below. Please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on Page 3 of this paper.

Remarks begin on Page 9 of this paper.



**LISTING OF THE CLAIMS**

The listing of claims ~~will replace all prior claims and~~ listing of claims in the application.

1. (currently amended): ~~A~~ **movable bleed solenoid** which has low leak properties comprising:

a housing defining an internal chamber therein;

an electromagnetic coil wound on a bobbin wherein said bobbin is coaxially mounted within the housing;

an axially movable armature mounted in the internal chamber, said armature having a first end and a second end;

an actuation member extending from an end of said armature;

a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil;

a valve manifold including a passage for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure and for directing said control side to an exhaust;

a first valve seat and a second valve seat;

a valve positioned for selectively sealing on said first valve seat or said second valve seat, wherein said actuation member is operable to selectively contact said valve;

a spring for biasing said armature; and

a control circuit for supplying power to said armature for allowing control of said supply pressure in a supply side for sealing the valve in a low leak position;

wherein said manifold further comprises a supply side seat and an exhaust side seat with said valve moving between said supply side seat and said exhaust side seat for selectively and variably positioning therebetween;

wherein the valve is a ball positioned between said exhaust side seat and said supply side seat.

2. (original): The solenoid of claim 1 wherein:

said spring biases said valve in a first direction and overcomes supply pressure acting on the valve, said armature upon being energized overcoming said spring and selectively opening said valve for allowing supply side pressure to bleed to the control side pressure port.

3. (canceled)

4. (canceled)

5. (currently amended): The solenoid of claim 4 1 wherein the valve seats are axially aligned with said actuation member.

6. (original): The solenoid of claim 1 wherein the armature acts to close the valve upon actuation thereof, said valve being normally open to supply side pressure.

7. (original): The solenoid valve of claim 5 wherein said spring is weaker than said supply side pressure acting on said valve.

8. (canceled)

9. (withdrawn): A variable bleed solenoid which has low leak properties comprising:

a housing defining an internal chamber therein;

an electromagnetic coil wound on a bobbin, wherein said bobbin is coaxially mounted within the housing;

an axially movable armature mounted in the internal chamber, said armature having a first end and a second end;

an actuation member extending from an end of said armature;

a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil;

a valve manifold including an aperture for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure port;

a first valve seat and a second valve seat;

a valve positioned for selectively sealing off said passages; and

a spring for biasing said armature toward closure of said valve to said supply side pressure, said spring being strong enough to overcome the supply pressure acting against it and said armature overcoming said spring biasing when said coil is energized.

10. (withdrawn): The solenoid of claim 9 wherein the manifold further comprises a supply side seat and an exhaust side seat with said valve moving between said supply side seat and said exhaust side seat and to variable positions therebetween.

11. (withdrawn): The solenoid of claim 10 wherein the valve is a ball positioned between said supply side seat and said exhaust side seat.

12. (withdrawn): The solenoid of claim 9 wherein the armature is axially aligned with said actuation member.

13. (withdrawn): A variable bleed solenoid which has low leak properties comprising:

a housing defining an internal chamber therein;

an electromagnetic coil wound on a bobbin wherein said bobbin is coaxially mounted within the housing;

an axially movable armature mounted in the internal chamber, said armature having a first end and a second end;

an actuation member extending from an end of said armature;

a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil;

a valve manifold including an a passage for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure and for directing said control side to an exhaust;

a first valve seat and a second valve seat;

a valve positioned for selectively sealing on said first valve seat or said second valve seat;

a spring for biasing said armature; and

a control circuit for supplying power to said armature for allowing control of said supply pressure in a supply side for sealing the valve in a low leak position;

wherein said solenoid may be configured into either a first proportional or inversely proportional configuration by inverting of the pole piece and flux tube in the housing and replacement of said spring.

14. (withdrawn): The solenoid of claim 13 wherein in the proportional configuration the spring biases the valve in a first direction for overcoming supply pressure acting on the valve and said armature upon being energized overcomes the spring and opens the valve for allowing supply side pressure to bleed to the control side pressure port.

15. (withdrawn): The solenoid of claim 13 wherein in the inversely proportional configuration said supply side pressure is normally open to control side pressure and said armature closing said valve upon energizing of said coil.

16. (withdrawn): The solenoid of claim 15 wherein a spring is utilized that is weaker than the force of said supply side pressure acting on the valve for allowing the normally open condition.

17. (withdrawn): The solenoid of claim 15 wherein a spring is configured for moving the armature toward opening of the valve to control side pressure.

18. (withdrawn): The solenoid of claim 13 wherein said valve is a ball valve.

19. (withdrawn): The solenoid of claim 14 wherein said valve is a ball valve.

20. (withdrawn): The solenoid of claim 15 wherein said valve is a ball valve.

21. (withdrawn): The solenoid of claim 16 wherein said valve is a ball valve.

22. (withdrawn): The solenoid of claim 17 wherein said valve is a ball valve.

**REMARKS**

Claims 1-22 are pending in this application.

Claims 1-8 are rejected.

Claims 9-22 have been withdrawn from consideration.

Claims 3, 4 and 8 have been cancelled, with out prejudice.

Claims 1 and 5 have been amended. Support for these amendments can be found throughout the specification, claims and drawings as originally filed.

**35 USC §103(a) REJECTION**

Claims 1-3, 6 and 7 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 4,538,845 to Perach in view of U.S. Patent No. 5,707,039 to Hamilton et al.

The Applicants respectfully traverse the 35 USC §103(a) rejection of claims 1-3, 6 and 7. Claim 3 has been canceled, without prejudice, and substantially incorporated into claim 1.

The standard for obviousness is that there must be some suggestion, either in the reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. In addition, "[s]omething in the prior art as a whole must suggest the desirability and, thus, the obviousness, of making" the modification to the art suggested by the Examiner. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 887 F.2d 1044, 1051, 5 U.S.P.Q.2d (BNA) 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988). Although the Examiner may suggest the teachings of a primary reference could be modified to arrive at the claimed subject matter, the modification is not obvious unless the prior art

also suggests the desirability of such modification. *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d (BNA) 1397, 1396 (Fed. Cir. 1989). There must be a teaching in the prior art for the proposed combination or modification to be proper. *In re Newell*, 891 F.2d 899, 13 U.S.P.Q.2d (BNA) 1248 (Fed. Cir. 1989). If the prior art fails to provide this necessary teaching, suggestion, or incentive supporting the Examiner's suggested modification, the rejection based upon this suggested modification is error and must be reversed. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990).

The law is also clear that a claim in dependent form shall be construed to incorporate all the limitations of the claim to which it refers. 35 USC §112 ¶ 4.

In the interests of expediting prosecution of the instant application, and without any admission that an amendment is necessary, the Applicant have amended claim 1 to recite, among other things, a variable bleed solenoid which has low leak properties comprising: (1) a housing defining an internal chamber therein; (2) an electromagnetic coil wound on a bobbin wherein said bobbin is coaxially mounted within the housing; (3) an axially movable armature mounted in the internal chamber, said armature having a first end and a second end; (4) an actuation member extending from an end of said armature; (5) a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil; (6) a valve manifold including a passage for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure and for directing said control side to an exhaust; (7) a first valve seat and a second valve seat; (8) a valve positioned for selectively sealing on said first valve seat or said second valve seat, wherein said actuation member is operable to selectively contact said valve; (9) a spring for biasing said armature; and



(10) a control circuit for supplying power to said armature for allowing control of said supply pressure in a supply side for sealing the valve in a low leak position; wherein said manifold further comprises a supply side seat and an exhaust side seat with said valve moving between said supply side seat and said exhaust side seat for selectively and variably positioning therebetween; wherein the valve is a ball positioned between said exhaust side seat and said supply side seat.

Neither Perach nor Hamilton et al., either alone or in combination therewith, discloses such a structure. Specifically, neither reference discloses a ball valve generally, and more specifically, neither reference discloses an actuation member extending from the armature that is operable to selectively contact the ball valve. Both of these references merely disclose poppet type valves that are fastened to, or otherwise connected to, the armature. In contrast, the instant invention claims a system wherein a portion of the armature, i.e., the actuation member, can selectively contact the valve. Thus, one of ordinary skill in the art would not look to either of Perach and/or Hamilton et al., either alone or in combination therewith, to construct a variable bleed solenoid, as presently claimed.

Therefore, the Applicants submit that neither Perach nor Hamilton et al., either alone or in combination therewith, render claim 1 obvious. Furthermore, claims 2, 6 and 7, which depend from and further define claim 1, are likewise not rendered obvious by Perach nor Hamilton et al., either alone or in combination therewith.

Accordingly, the Applicant submits that the 35 USC §103(a) rejection of claims 1-2, 6 and 7 has been overcome.

**35 USC §103(a) REJECTION**

Claims 4, 5 and 8 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 4,538,845 to Perach, as modified, as applied to claim 1 above, and further in view of U.S. Patent No. 5,752,659 to Birkhimer et al.

The Applicants respectfully traverse the 35 USC §103(a) rejection of claims 4, 5 and 8. Claim 4 has been canceled, without prejudice, and substantially incorporated into claim 1. Claim 8 has also been canceled, without prejudice.

As previously noted Perach does not disclose such a structure as recited in claim 1. Specifically, it does not disclose a ball valve generally, and more specifically, it does not disclose an actuation member extending from the armature that is operable to selectively contact the ball valve. Perach merely discloses a poppet type valve that is fastened to, or otherwise connected to, the armature. In contradistinction, the instant invention claims a system wherein a portion of the armature, i.e., the actuation member, can selectively contact the valve.

While Birkhimer et al. arguably discloses a ball type valve, it does not cure the deficiencies in the teachings of Perach. Most importantly, Birkhimer et al. appears to disclose a system wherein there is only one valve seat 74 adjacent to the ball valve 76, as opposed to two valve seats as currently claimed. Thus, one of ordinary skill in the art would not look to either of Perach and/or Birkhimer et al., either alone or in combination therewith, to construct a variable bleed solenoid, as presently claimed.

Therefore, the Applicants submit that neither Perach nor Birkhimer et al., either alone or in combination therewith, render claim 1 obvious. Furthermore, claim 5, which

depends from and furthers define claim 1, is likewise not render obvious by Persch nor Birkhimer et al., either alone or in combination.

Accordingly, the Applicant submits that the 35 USC §103(a) rejection of claim 5 has been overcome.

### **CONCLUSION**

It is respectfully submitted that in view of the above amendments and remarks the claims, as amended, are patentably distinguishable because the cited patents, whether taken alone or in combination, do not teach, suggest or render obvious, the present invention. Therefore, applicant submits that the pending claims are properly allowable, which allowance is respectfully requested.

The Examiner is invited to telephone the applicant's undersigned attorney at (248) 364-4300 if any unresolved matters remain.

Any needed extension of time is hereby requested with the filing of this document.

The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 501612. A duplicate copy of this letter is enclosed herewith for this purpose.

Respectfully submitted,

WARNHOFFMANN, MILLER & LALONE, P.C.  
Attorneys for Applicant(s)

Dated:

June 28, 2004

By:



Philip R. Warn  
Reg. No. 82775  
Preston H. Smirman  
Reg. No. 85365

P.O. Box 70098  
Rochester Hills, MI 48307  
(248) 364-4300

PRW:PHS:cah

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Richard W. Hoffmann  
Douglas P. LaLone  
John K. McCulloch  
John A. Miller  
Gregory L. Ozga  
Preston H. Smirman  
Philip R. Warn

691 North Squirrel Road - Suite 140  
Auburn Hills, Michigan 48326

[www.warnhoffmann.com](http://www.warnhoffmann.com)

Telephone: (248) 364-4300  
Facsimile: (248) 364-4285

Saginaw Office  
5291 Colony Drive North  
Saginaw, Michigan 48603  
Telephone: (989) 792-2500  
Facsimile: (989) 792-2535

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